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Facts About Cotton

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LEAFLET NO. 167

BUREAU OF AGRICULTURAL ECONOMICS

U.S. DEPARTMENT OF AGRICULTURE

FACTS ABOUT COTTON

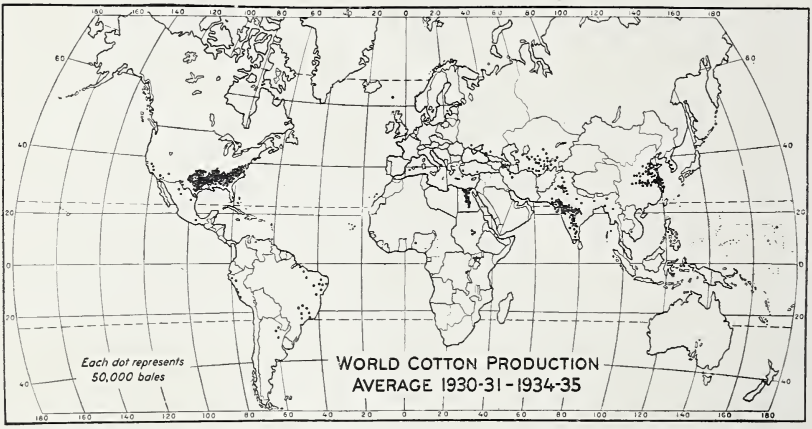
Prepared in the Bureau of Agricultural Economics

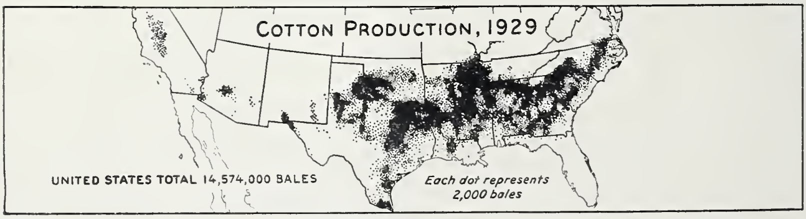
COTTON PRODUCTION

COTTON is the great crop of the South. It is grown on about 2 million farms in the southern part of our country. The average size of the crop is about 13 million bales of cotton lint, each weighing about 500 pounds, and about 6 million tons of cottonseed.

Large quantities of cotton are grown in other countries, too—chiefly India, China, Egypt, Brazil, and the Union of Soviet Socialist Republics. These cottons differ in quality to some extent from those grown in the United States and there is also considerable variation in the varieties and qualities of cotton produced here. Usually about one-half of our crop is used in our own mills. The remainder is exported chiefly to Japan, Great Britain, and the continent of Europe.

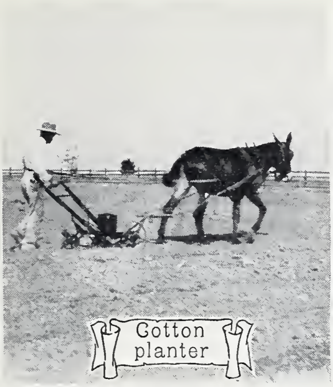
The planting of cotton begins in February in the southernmost parts of the Cotton Belt, and moves northward. At the northern edge of the belt and at the higher elevations planting usually is completed in May. As the pictures suggest, the methods of cultivating, harvesting, and handling vary through the Cotton Belt, from rather primitive in some sections, to very modern in others. The crop requires hand work. Usually cotton pickers of all ages are in great demand for picking from August through November. A field of open cotton bolls with pickers along the rows is a characteristic southern scene.



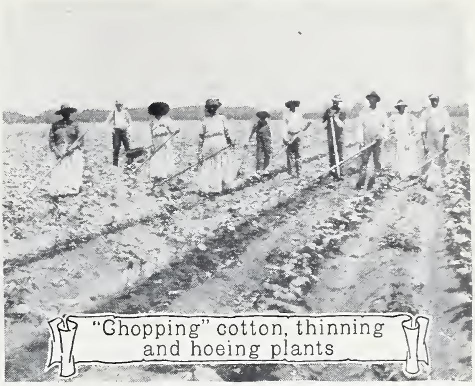


Issued September 1938

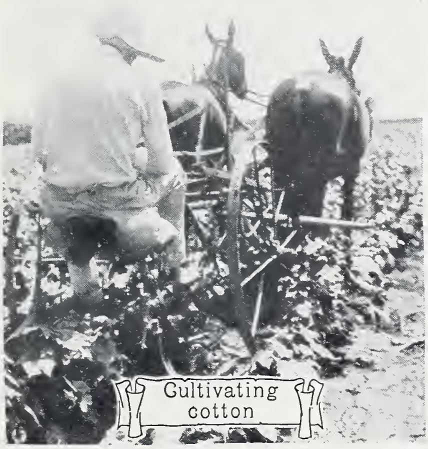
COTTON PRODUCTION



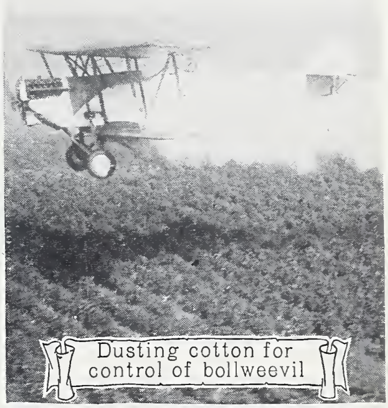
Cotton planter



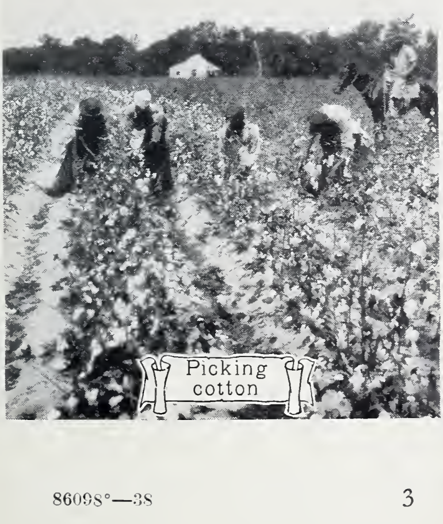
"Chopping" cotton, thinning and hoeing plants



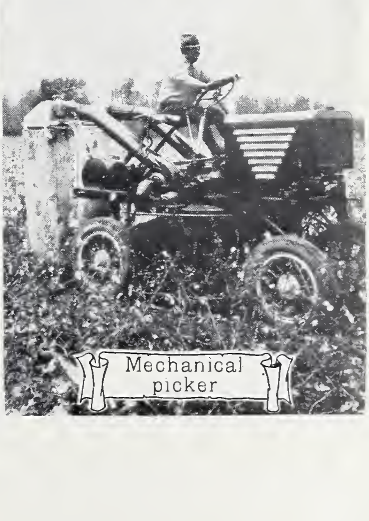
Cultivating cotton



Dusting cotton for control of bollweevil



Picking cotton



Mechanical picker

COTTON MARKETING

When the cotton is picked, it is hauled by wagon or truck to the gins where the fibers are separated from the seed. These separated fibers are called "lint." The lint is packed into bales at the gin, and the seed is either run into the gin's seed house or loaded back into the farmer's wagon or truck. There are about 13,000 cotton gins in this country, operating through a season of 2 to 6 months.

At the gin the trade channels of cotton and cottonseed separate. The lint starts on its way to the spinner, who makes it into yarn. If the seed is not taken back to the farms, it starts on its way to the cottonseed-oil mills to be converted into such products as cottonseed oil, meal, cake, hulls, and linters.

When the lint cotton comes from the gin it is packed into bales that weigh about 500 pounds gross each. The dimensions of these bales are 54 by 27 by about 46 inches, and the density is about 12½ pounds per cubic foot. This type of bale is known as the uncompressed or flat bale. It is weighed, marked, and tagged at the gin.

This bale may then be sold immediately to the ginner or to some other local buyer, or it may be left in the gin yard by the farmer for later sale. Sometimes the bales are loaded into the farmer's wagon and hauled to a market for sale. Sometimes the cotton is hauled back to the farm, or to a public warehouse, for storage until the farmer is ready to sell. In the Southeastern States some growers sell direct to spinners. Some farmers sell through their own cooperative associations.

Several kinds of buyers are engaged in buying cotton from farmers. Some of them are agents for large cotton firms who supply cotton to domestic mills and to exporters. If the local buyer acts for himself, he usually sells to the large cotton firms. The services of a large group of cotton buyers, cotton merchants, exporters, and brokers are involved in bringing raw cotton from producers to spinners in this country and abroad.

Usually each dealer through whose hands a bale of cotton passes, samples and grades it as spinners pay for cotton according to its grade and the length of the fiber. The Government, the cotton-growing States, and leading plant breeders are constantly working toward improvement in the quality of American cotton, and improvements are being made in methods of classing, grading, and sampling cotton.

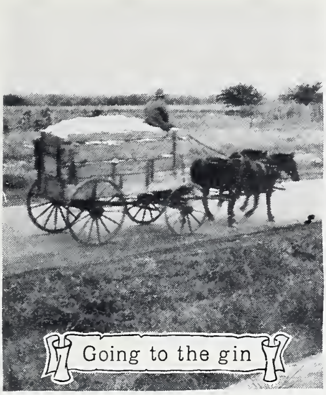
When cotton is to be shipped from the local market, it is loaded on a freight car or a truck and begins its journey to a mill. Usually it is sent first to a compress point. There the bales are compressed to reduce their size so they will occupy the least possible space in a freight car or in the hold of a ship. About 350 compress plants are distributed through the Cotton Belt.

After the bales are compressed they continue their journey by rail, truck, or water direct to mills or to large inland or port markets for storage in warehouses until needed by mills.

Cotton-futures markets are an important part of the cotton-merchandising system. These markets provide a means by which cotton merchants and spinners can protect themselves against price changes while cotton is being transported or is in storage. There are three cotton futures markets in this country, located in New York, New Orleans, and Chicago.

Most of our 1,200 domestic cotton mills that manufacture raw cotton into yarn and cloth are located in the cotton-growing States. Massachusetts leads the noncotton-growing States in manufacturing cotton. The

COTTON MARKETING

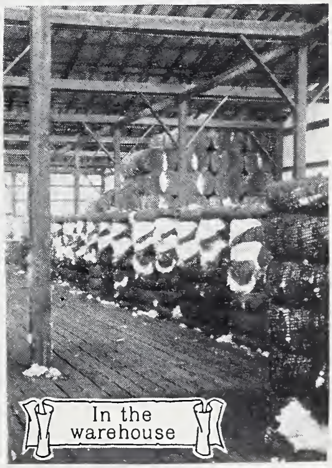

Going to the gin

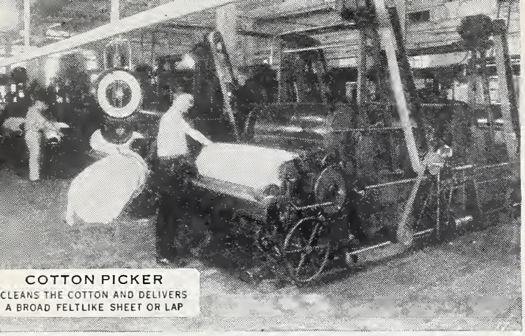
Unloading at gin

Sampling at a market

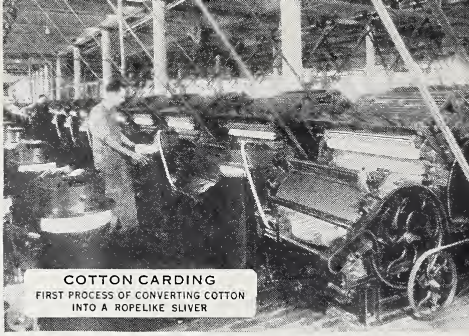
Classification

Waiting for export

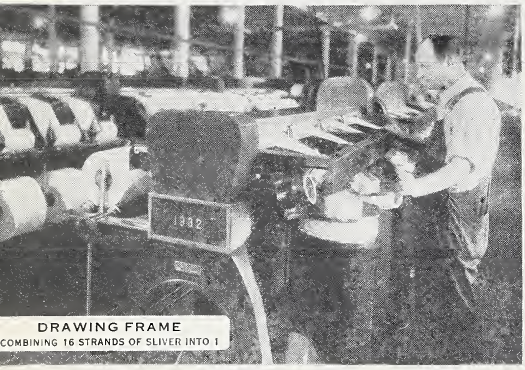

In the warehouse



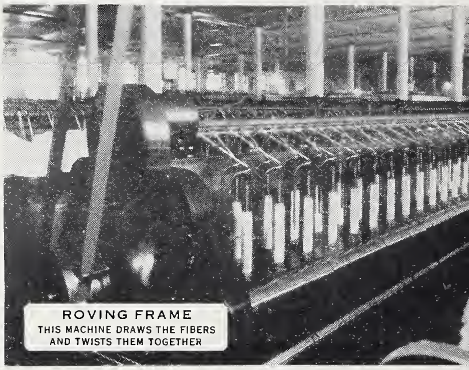
COTTON PICKER
CLEANS THE COTTON AND DELIVERS A BROAD FELTLIKE SHEET OR LAP



COTTON CARDING
FIRST PROCESS OF CONVERTING COTTON INTO A ROPELIKE SLIVER



DRAWING FRAME
COMBINING 16 STRANDS OF SLIVER INTO 1



ROVING FRAME
THIS MACHINE DRAWS THE FIBERS AND TWISTS THEM TOGETHER

principal products of this industry are woven cloth and cotton yarn, waste that is sold to other industries, batting, wadding, and mattress felts. The tabulation on the last page lists many of the uses of cotton.

Uses for cotton yarn and cloth are many, but most of the principal uses are familiar to us all. Outstanding are articles of clothing such as work clothes, house dresses, and shirts. Household articles like sheets, pillowcases, towels, and tablecloths require large quantities. Industrial uses, like making automobile tires, cotton bags, and belts and belting, require about as much cotton as is used for clothing. The total per-capita consumption of cotton in the United States averages about 25 pounds a year.

The transition from hand spindles and looms to power machinery was one of the principal factors in the industrial revolution in the latter part of the eighteenth century. Since then substantial improvements have been made in manufacturing processes from the standpoint of the quantity of goods produced per man and per machine and of the quality of finished products. Most of these changes are technical in nature and require more discussion than is possible here.

Hargreaves' spinning jenny (1764), Arkwright's spinning frame (1769), Crompton's spinning mule (1779), Cartwright's power loom (1789), the harnessing of Watt's steam engine to spinning and weaving machinery (1785), invention of the cotton gin (1793), ring spinning (1831), automatic loom (1894), and long-draft spinning (1913) are among basic inventions that have revolutionized the manufacture of raw cotton, lowered the prices of finished goods, and increased the use of cotton and cotton cloth enormously.

The story of the principal manufacturing processes in an up-to-date cotton mill is here told by the photographs.

COTTONSEED has become an important crop in itself. The average crop of cottonseed in the United States is approximately 6 million tons, out of which only about 600,000 tons are used each year for planting. Of the rest, most is sold to the cottonseed crushing mills, which are generally called oil mills, for the preparation of cottonseed oil, cottonseed cake and meal, hulls, and cotton linters.

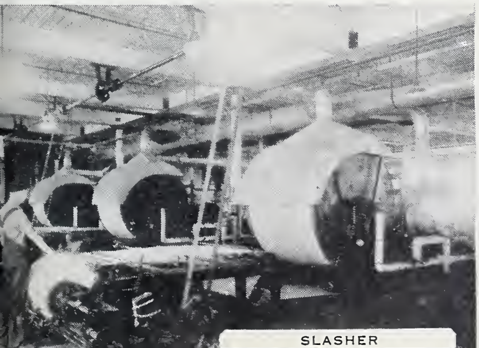
When marketing cottonseed, the farmer usually takes his seed cotton to a gin, where the lint cotton is separated from the seed, is baled, and returned to the farmer. The farmer usually sells the seed immediately to the ginner though he may take it home to plant or may sell it direct to a local oil mill. The ginner accumulates seed until he has a large lot, which he sells to the oil mill that makes him the best offer. At the mills, cottonseed is accumulated in large storage houses from which it is conveyed mechanically, as needed, through the cleaning, delinting, hulling, separating, rolling, cooking, and pressing apparatus.

Cottonseed, as it leaves the gins, usually still has some lint—enough to interfere seriously with the later processes—so the seed is usually delinted immediately after it is cleaned. These fibers, when removed and baled like cotton (but in 600-pound bales), are called cotton linters and are used for felts and waddings for upholstery for furniture and automobiles, mattresses, etc. Some of the better quality is spun and manufactured into such articles as twine, floor mops, and floor coverings. Linters are also used as a source of cellulose in the manufacture of rayon, varnishes, cellophane, films, and plastics, and in the manufacture of explosives.

The crude cottonseed oil is refined at local plants or at large refineries. Refined cottonseed oil may be sold as salad and cooking oils, or it may be hydrogenated and sold as vegetable shortening under various trade names.

NNING FRAMES

BARBER-COLEMAN SPOOLER



SLASHER

LOOMS

Cottonseed cake is valuable chiefly in the feeding of cattle and poultry. It is generally exported in the form of cake or slabs. For feeding cattle, sheep, and hogs, the cakes are cracked into various sizes or are ground into meal. Cottonseed meal is also used as a plant fertilizer. Some cottonseed cake, made entirely from perfectly sound cottonseed, is ground, bolted, and sold as a flour for making bread and cakes for use in hospitals by persons who may not eat starches or sugar.

Generally, cottonseed hulls are used as a roughage feed, but many chemists and technologists are working on other promising ways to use their constituents.

Thus all the contents of the cotton boll are put to use—the lint, the seed, and the seed hull.

PRINCIPAL USES OF COTTON AND COTTONSEED

COTTON

Clothing:

Accessories	Handkerchiefs, gloves, belts.
Athletic	Uniforms, robes, bathing suits.
Coats	Rain, jumpers, jackets, top.
Costumes	Theatrical, carnival, party.
Dresses	House, school, sport, evening.
Foundation garments.	Brassieres, corsets, girdles.
Hosiery	Work, dress, sport.
Infant's wear	Diapers, bibs, wrappers.
Shirts	Work, business, sport, dress.
Sleeping, lounging	Pajamas, gowns, robes, coats.
Suits, pants	Overalls, summer suits, slacks.
Underwear	Shirts, shorts, slips, union suits.
Uniforms	Industrial, professional.

Industrial:

Airplanes, etc	Wings, fuselage, gas cells.
Athletic equipment	Pads, mats, nets, covers.
Automobiles, etc	Tires, seats, body, top.
Bags	Feed, flour, sugar, salt.
Barber supplies	Hair aprons, towels, pads.
Belting, etc	Belts, conveyors, hose.
Building supplies	Shades, awnings, wall covering.
Canvas shelters	Tents, tarpaulins, canopies.
Farm equipment	Binder aprons, covers, harnesses.
Filter cloths	Oil, sugar, chemicals, foods.
Flags and displays	Bunting, signs, stage property.
Furniture	Upholstery, chairs, cots.
Insulation	Wires, cords, tapes.
Laundry supplies	Nets, covers, padding, twine.
Luggage	Bags, cases, trunks.
Marine equipment	Covers, sails, nets, lines.
Meat packaging	Covers, casings, twines.
Medical supplies	Absorbent cotton, gauze, tape.
Mortuary supplies	Caskets, shrouds, straps.
Office equipment	Machine covers, ribbons, pads.

COTTON—Continued

Industrial—Continued

Publishers' supplies	Book covers, bindings.
Railroad equipment	Car supplies and fittings.
Shoe materials	Linings, rubbers, canvas shoes.

Household:

Accessories	Towels, oilcloth, mops.
Bed cottons	Sheets, pillowcases, spreads.
Bedcovers	Quilts, comfortables, blankets.
Bedding, other	Mattresses, covers, pillows.
Curtains, etc	Window, shower, tapestries.
Floor coverings	Carpets, rugs, runners, mats.
Furniture covers	Slip covers, ironing boards.
Table cottons	Tablecloths, napkins, pads.

COTTONSEED

Oil:

Food	Fats, oils, margarine.
Soaps, cosmetics	Soaps, lotions, creams.
Coated fabrics, etc	Artificial leather, linoleum.
Miscellaneous	Explosives, paints, medicines.

Cake and meal:

Stock feed	Cattle, poultry, sheep, hog.
Fertilizer	Field crops, gardens, lawns.
Miscellaneous	Dyestuffs, human foods.

Linters:

Bedding	Mattresses, quilts, comfortables.
Upholstery	Furniture, automobiles.
Yarns	Mops, cordage, wicks.
Cellulose	Rayon, explosives, lacquers, films, cellophane, plastics.
Miscellaneous	Absorbent cotton, horse collars.

Hulls:

Stock feed	Roughage, bran.
Packing and stuffing	Horse collars, baseballs.
Cellulose	Rayon, explosives.
Furfural	Plastics, synthetic resins.

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